

REMARKS

The present Amendment amends claims 1 and 2. Therefore, the present application has pending claims 1 and 2.

As per an earlier discussion with the Examiner attached herewith are copies of the foreign references cited during the prosecution of the parent application to be considered by the Examiner. A listing of said foreign references is provided by a Form PTO-1449. An indication that said references have been considered as required by the Examiner is respectfully requested.

Claim 2 stands objected to due to informalities noted by the Examiner in the Office Action. Amendments were made to claim 2 to correct the informalities noted by the Examiner. Therefore, Applicants submit that this objection is overcome and should be withdrawn.

Claims 1 and 2 stand rejected under 35 USC §103(a) as being unpatentable over Kuwabara (U.S. Patent No. 5,184,313). This rejection is traversed for the following reasons. Applicants submit that the features of the present invention as now recited in claims 1 and 2 are not taught or suggested by Kuwabara whether taken individually or in combination with any of the other references of record. Therefore, Applicants respectfully request the Examiner to reconsider and withdraw this rejection.

The present invention is directed to a laser interferometer displacement measuring system such as that illustrated, for example, in Fig. 2 of the present application including a laser light source 1, 2, an interferometer 5 for dividing laser light of wavelength λ emitted from the laser light source 1, 2 into a reference path

beam and a measurement path beam 2 to interfere the reference path beam with the measurement path beam having been reflected from a subject body 6, 8 and a light detector 9 for detecting the light subjected to the interference in the interferometer 5 in which a variation in length of an optical path of the measurement path beam 3 caused by a movement of the subject 6, 8 is n times a displacement of the subject body 6, 8.

The laser interferometer displacement measurement system of the present invention further provides, for example, means for suppressing a relative peak intensity, with respect to a base line of a frequency spectrum, of a peak of frequency component $f=Nv/\lambda$. According to the present invention, this means enables the selective elimination of error signals caused by the interference of laser light, making it possible to correct the error signals without attenuating signals, said error signals being caused by, for example, mechanical vibration. The Examiner's attention is directed to the discussion of the present invention, for example, on page 46, lines 17-24 of the present application.

Thus, for example, according to the present invention peaks of $f=Nv/\lambda$ as illustrated in Fig. 28a of the present application are observed at equal integrals in the signal before correction. Upon implementation of the above described features of the present invention the above described peaks as illustrated in Fig. 28a of the present application are selectively eliminated as represented in, for example, in Fig. 28b of the present invention. This selective elimination of such peaks is performed without attenuating other signals in the high frequency band. Thus, according to the present invention distortion errors caused by the measurement system itself are

corrected, thereby enabling a highly accurate length measurement. The Examiner's attention is directed to page 3, lines 10-18 of the present application.

The above described features of the present invention are not taught or suggested by any of the references of record whether taken individually or in combination with each other. Particularly, the above described features of the present invention are not taught or suggested by Kuwabara.

Kuwabara teaches that based on a temperature signal T and an atmosphere pressure signal P, wavelength corrector 55 corrects the value of the wavelength λ of the laser light emitted by the laser 1. Thus, as taught by Kuwabara even if the room temperature or atmosphere pressure changes over time, accurate measurements can still be achieved. The Examiner's attention is directed to col. 7, lines 21-45 of Kuwabara. In this passage, Kuwabara clearly teaches that the wavelength λ is corrected depending upon the value represented by signals T and P (temperature and atmospheric pressure respectively).

Thus, as is quite clear from the above, there is no teaching whatsoever in Kuwabara of the means for suppressing a relative peak intensity, with respect to a base line of a frequency spectrum, of a peak of frequency component $f=Nv/\lambda$ as recited in the claims. Kuwabara simply discloses the correction of the wavelength of a laser beam based upon temperature or atmospheric pressure.

It should be noted that Kuwabara relates to the correction of the wavelength itself output by the laser light source. The present invention differs substantially from that taught by Kuwabara being that according to the present invention the correction is not of the wavelength of the laser light emitted from the laser light source as taught

by Kuwabara but the suppression of the relative peak intensity of a signal indicative of the amount of light reflected from the subject body and received by the light detector as in the present invention. In the present invention error signals caused by the interference of the laser light in the interferometer are selectively eliminated. Such features are clearly not taught or suggested by Kuwabara since it is merely directed to the correction of the wavelength of the laser light emitted by the laser light source according to temperature and atmospheric pressure values.

Thus, based on the above, it is quite clear that the features of the present invention as now more clearly recited in the claims are not taught or suggested by Kuwabara whether taken individually or in combination with any of the other references of record. Therefore, reconsideration and withdrawal of the 35 USC §103(a) rejection of claims 1 and 2 as being unpatentable over Kuwabara is respectfully requested.

The remaining references of record have been studied. Applicants submit that they do not supply any of the deficiencies noted above with respect to the reference utilized in the rejection of claims 1 and 2.

In view of the foregoing amendments and remarks, Applicants submit that claims 1 and 2 are in condition for allowance. Accordingly, early allowance of claims 1 and 2 is respectfully requested.

To the extent necessary, the applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of Antonelli, Terry, Stout & Kraus, LLP, Deposit Account No. 01-2135 (1021.39949VX1).

Respectfully submitted,

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